Job Risk Analysis

Name(s) of Risk Team Members: J. deBoer, M. Van Essendelft, E.T. Lessard, J. Banham (Drew Industrial)	Point Value → Parameter ↓	1	2	3	4	5
Job Title: Adding Cooling Tower Chemicals (Tower 7) Job Number or Job Identifier: JRA 17 - 05	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Description: Delivering, transfering, sampling and analyzing cooling tower water treatment chemicals	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Training and Procedures List (optional): HazCom, contractors have CDL and Hazwoper Training Approved by: *E. Lessard* Date: 5-13-05 Rev. #: 0	Likelihood (D)	Impossible	Unlikely	Possible	Probable	Multiple

Stressors (if applicable, please list all): Weather, lighting, ventilation	Reason for Revision (if applicable):	Comments:

				Before Additional Controls							After Additional Controls						
Job Step / Task	Hazard	Control(s)	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	Control(s) Added to Reduce Risk	**Stressors Y/N**	**# of People A**	**Frequency B**	**Severity C**	**Likelihood D**	**Risk* AxBxCxD**	% Risk Reduction
Transport of chemicals to on site locations	Traffic accidents	Licensed CDL drivers, DOT compliant, Hazwoper trained, emergency call number available 24 hrs/day, all chemicals on BNL CMS inventory and MSDS database	Y	1	3	5	3	45								
Transport of chemicals to on-site locations	Dropped load	Licensed CDL drivers, DOT compliant, Hazwoper trained, emergency call number available 24 hrs/day, all chemicals on BNL CMS inventory and MSDS database, use of closed trucks (e.g.: not flatbeds)	Y	1	3	2	3	18								
Manual movement of material onto and off of truck	Dropped load	Hazwoper trained, emergency call number available 24 hrs/day, all chemicals on BNL CMS inventory and MSDS database, use of lift gates on trucks, use of drum dollies, manual movement by personnel avoided	Y	1	3	3	2	18								
Manual movement of material onto and off of truck	Falls on same level	Proper selection of PPE (e.g.: slip resistant safety shoes), housekeeping rules, maintenance of walking/working surfaces, work planning, emergency response	Y	1	3	3	3	27								
Manual movement of material onto and off of truck	Falls to lower level	Proper selection of PPE (e.g.: slip resistant safety shoes), housekeeping rules, work planning, emergency response, lift gates move material up & down	Y	1	3	4	3	36								

Manual movement of material onto and off of truck	Bodily reaction – injuries resulting from bending, climbing, loss of balance and slipping without falling	Proper selection of PPE (e.g.: slip resistant safety shoes), housekeeping rules, work planning, emergency response, lift gates move material up & down, maintenance of walking/working surfaces	Y	1	3	3	3	27									
Handling and working with chemicals during transfer	Inhalation, absorption through skin, ingestion	CMS, MSDSs, work planning, procedures, PPE, use of small volumes, ventilation, secondary containment for liquids, containers and systems Article 12 compliant, spill response, hazardous waste controls, use of safer substitutes, Tier 1 inspections, proper transfer equipment (pumps are secured to drum, hoses are secured to storage tanks)	Y	2	3	2	3	36									
Handling and working with chemicals during transfer	Eye irritation	CMS, work planning, procedures, PPE, ventilation, use of safer substitutes, goggles or face shields required, transfer systems hard piped, secured prior to opening, proper transfer equipment (pumps are secured to drum, hoses are secured to storage tanks)	Y	2	3	2	3	36									
Batch feeding chemicals to cooling tower (manually adding chemical to basin)	Inhalation, absorption through skin, ingestion, eye irritation	CMS, MSDSs, work planning, procedures, PPE, use of small volumes, ventilation, secondary containment for liquids, containers and systems Article 12 compliant, spill response, hazardous waste controls, use of safer substitutes, Tier 1 inspections, proper transfer equipment (pumps are secured to drum, hoses are secured to storage tanks)	Y	2	3	2	3	36									
Sampling cooling tower water	Pressurized system	Procedures, work planning, PPE, known sample points, proper valving, small volumes	Y	2	3	1	3	18									
Analyzing cooling tower water with chemical reagents	Inhalation, absorption through skin, ingestion, eye irritation	CMS, MSDSs, work planning, procedures, PPE, use of small volumes, ventilation, secondary containment for liquids, spill response, hazardous waste controls, use of safer substitutes, Tier 1 inspections	Y	2	3	2	3	36									
Chemical transfer/feed to towers	Inhalation, absorption through skin, ingestion, eye irritation	Automatic feed system, CMS, MSDSs, work planning, procedures, PPE, use of small volumes, ventilation, secondary containment for liquids, containers and systems Article 12 compliant, spill response, hazardous waste controls, use of safer substitutes, Tier 1 inspections	Y	2	3	2	2	24									
Maintenance of system	Inhalation, absorption through skin, ingestion, eye irritation	Automatic feed system, CMS, MSDSs, work planning, procedures, PPE, use of small volumes, ventilation, secondary containment for liquids, containers and systems Article 12 compliant, spill response, hazardous waste controls, use of safer substitutes, Tier 1 inspections, securing equipment isolates chemical from tubing and pumps, LOTO if required, isolation valves	Y	2	3	2	3	36									

Maintenance of system	Bodily reaction – injuries resulting from bending, climbing, loss of balance and slipping without falling	Proper selection of PPE (e.g.: slip resistant safety shoes), housekeeping rules, work planning, emergency response, maintenance of walking/working surfaces (assistance from Water Group Techs as necessary)	Y	2	3	3	3	54									
Further Description of Controls Added to Reduce Risk:																	

*Risk:	0 to 20	21 to 40	41-60	61 to 80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable